

L 63122-92 EWT(m)/EPF(s)/EWP(i)/T RFL M/RM  
ACCESSION NR: AP5013756

UR/0020/65/162/002/0364/0365

AUTHOR: Amerik, Yu.B.; Krentsel', B.A.; Shishkina, M. V.

TITLE: Effect of the application of strong electrostatic fields in the course of the polymerization of methyl methacrylate on the structure of the polymer formed

SOURCE: AN SSSR. Doklady, v. 162, no. 2, 1965, 364-365

TOPIC TAGS: polymethylmethacrylate, polymer structure, polymerization, electrostatics, polymer

ABSTRACT: In a recent article, Yu. B. Amerik, B. A. Krentsel', and M. V. Shishkina briefly review several non-Soviet studies on the preparation of poly(methyl methacrylate) (PMMA) mainly of predetermined structures (syndiotactic, isotactic, isotactic-syndiotactic block copolymers).

The authors question the conclusion of F. A. Bovey\* that there is no difference between the activation entropies for syndiotactic and isotactic monomer placement and that this placement is solely determined by the

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difference in the activation enthalpies for propagation of these structures. To demonstrate the role of activation entropy in the structural formation of PMMA, methyl methacrylate (MMA) was polymerized in bulk and in toluene solution in strong electrostatic fields ( $10^4$ — $10^5$  v/cm) in special reactors. Benzoyl peroxide (1 mol%) was used as initiator. The structure of PMMA formed was determined from its glass temperature ( $T_g$ ) and from the values of an arbitrary parameter J. Calculations of J-values were based on equations provided by W. E. Goode\*\* and calculated from IR spectra. Polymerization conditions and values for  $T_g$  and J obtained in electrostatic fields with different intensities are given in Table 1.

Comparison of these data with the  $T_g$  and J values given by Goode in Table 2 below indicates that: 1) polymerization in strong electrostatic fields yields PMMA with an increased percentage of syndiotactic structure; and 2) electrostatic fields affect the structure of PMMA to a lesser degree in toluene solution than in bulk.

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Table 1. Polymerization conditions and values

Polymerization temperature, °C	Field intensity, v/cm	Glass temperature, °C	Infrared J value
Bulk polymerization			
50	0.0	106	101
50	0.0	106	97
50	$2.0 \times 10^4$	110	107
50	$2.5 \times 10^4$	111	106
50	$4.0 \times 10^4$	113	112
Solution polymerization			
50	0.0	108	103
50	0.0	107	103
50	$6.0 \times 10^4$	112	106
50	$6.0 \times 10^4$	112	107
40	$7.0 \times 10^4$	113	109

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Table 2. Properties of amorphous polymers of methyl methacrylate

Type	Suggested chain configuration	Glass temp., °C	Density at 30°C, g/ml	Infrared J value
I	Syndiotactic	115	1.19	100-115
II	Isotactic	45	1.22	25-35
III	Isotactic-syndiotactic	60-95	1.20-1.22	40-80
Conventional	Essentially random	104	1.188	95-100

Strong electrostatic fields affect not only the polymer structure but also the MMA polymerization kinetics and the molecular weight of the polymer. The authors state that MMA polymerization in stronger electrostatic fields will yield PMMA specimens with a predominantly syndiotactic structure.

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L 63783-65

ACCESSION NR: AP5013756

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\* Bovey, F. A. Polymer NMR spectroscopy. III. The rates of the propagation steps in the isotactic and syndiotactic polymerization of methyl methacrylate. *Journal of polymer science*, v. 46, 1960, 59-64.

\*\* Goode, W. E., F. H. Owens, R. P. Fellmann, W. H. Snyder, and J. E. Moore. Crystalline acrylic polymers. I. Stereospecific anionic polymerization of methyl methacrylate. *Journal of polymer science*, v. 46, 1960, 317-331.

Orig. art. has: 2 formulas, 2 tables.

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A.B. Topchiyeva Akademii nauk SSSR (Institute of Petro-Chemical Synthesis, Academy of Sciences SSSR) 44,55

SUBMITTED: 03Nov64

ENCL: 00

SUB CODE: MT,GC

NR REF Sov: 000

OTHER: C06

FSB v.1, no.9

Card 5/5

8871-66 EWT(m)/EWP(j)/T RM

ACC NR: AP5025960 SOURCE CODE: UR/0190/65/007/010/1713/1718

AUTHOR: Amerik, V. V.; Krentsel', B. A.; Shishkina, M. V.

ORG: Institute of Petrochemical Synthesis, AN SSSR (Institut  
neftekhimicheskogo sinteza AN SSSR) 38  
15TITLE: Investigation of the crotonaldehyde <sup>7</sup> polymerization reaction 7,44,55SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 10, 1965,  
1713-1718TOPIC TAGS: aliphatic aldehyde, polymerization, catalytic polymeriza-  
tion, polymerization catalyst, polymerization kinetics, polymer  
structure

ABSTRACT: The polymerization of crotonaldehyde was investigated to help elucidate the effect of the presence of different substituents on the polymerization of acrolein. Polymerizations were run with an anionic catalyst under nitrogen atmosphere in the -80 to -60°C temperature range. Sodium methoxide and sodium naphthalene complex was shown to be an effective catalyst for polymerization on the carbonyl group. Polymerization temperature significantly affects not only the process kinetics but the structure of the polymer chain. Polymer

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UDC: 66.095.26+678.744

- 30, 1-61

ACC NR: AP5025960

yield and polymer molecular weight increased with reduction of temperature to -10 to -20°. The content of the free aldehyde group in the polymer decreased while the  $\text{CH}_3\text{CH}=\text{CH}-$  side group content increased with reduction of temperature. Maximum yield was obtained with monomer concentration of 3 mol/l. The polymer obtained was predominantly polyacetalic, molecular weight 1,000 to 10,000. The absence of  $\text{CH}_3\text{CH}-\text{CH}=$  units in the polymer was established by ozonolysis. The effect of solvent on polymer yield and structure are to be studied further. Orig. art. has: 3 equations, 4 tables and 5 figures.

SUB CODE: MT, OC/ SUBM DATE: 10Nov64/ ORIG. REF: 001/ OTH REF: 011

Card 2/2

R18

L 00536-67 EWT (n)  
ACC NR: AP 6035590

SOURCE CODE: UR/0364/66/002/011/1332/1335

AUTHOR: Raskina, E. M.; Perekal'skaya, L. M.; Davydov, B. E.; Shishkina, M. V.

37

ORG: Institute of Petrochemical Synthesis im. A. V. Topchiyev, Academy of Sciences  
SSSR, Moscow (Institut neftekhimicheskogo sinteza Akademii nauk SSSR)

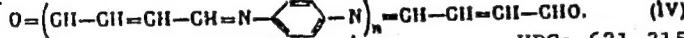
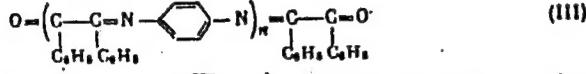
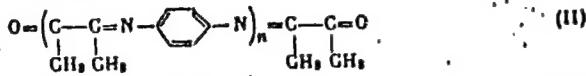
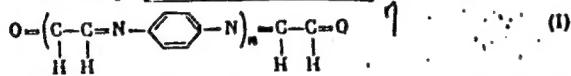
3

TITLE: Preparation and study of complexes of Schiff bases

SOURCE: Elektrokhimiya, v. 2, no. 11, 1966, 1332-1335

TOPIC TAGS: organic semiconductor, semiconducting polymer, charge transfer complex

ABSTRACT: Charge transfer complexes of polymeric Schiff bases and bromine have been prepared and the effect of chemical structure on the physical, chemical and electrical properties of these complexes has been studied. The polymers (I-IV) were prepared by polycondensation of p-phenylenediamine with various dicarboxylic compounds:



UDC: 621.315.592:547

Card 1/3

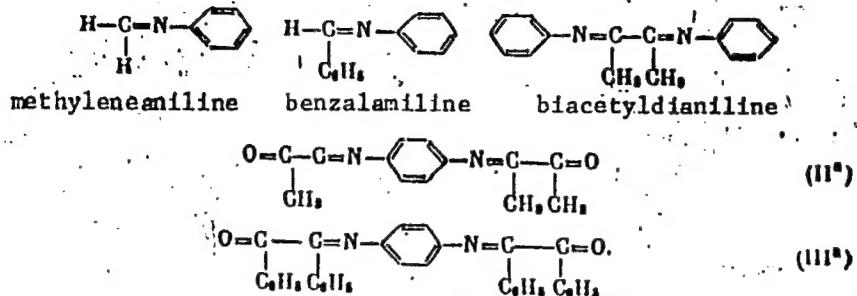
APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R001549610009-6"

L 08536-67

ACC NR: AP6035590

For comparative purposes, analogous low-molecular-weight compounds were also prepared:



The complexes were prepared by treatment of the compounds with gaseous bromine. The results of density, x-ray-diffraction, thermal-stability, and IR and EPR spectroscopic measurements are described briefly in the source. Electrical measurements showed that for complexes of the monomeric compounds (benzalaniline, biacetylaniline, but not methyleneaniline), resistivity did not drop below  $10^{11}$  ohm cm. On going to the dimers II<sup>a</sup> and III<sup>a</sup>, resistivity dropped by more than six orders of magnitude. However, on going to the corresponding polymers, resistivity changed but little. Differences in polymer structure had a marked effect for complexes with

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L 08536-67

ACC NR: AP6035590

a bromine content no higher than 21-35%, but had little effect at higher bromine content. For most complexes, the activation energy for conduction was lower for the low-temperature region than for the high-temperature region, but the reverse was true in a number of cases, e.g., the complex of II (64% bromine). The temperature behavior of resistivity was interpreted in terms of macromolecular coplanarity. Orig. art. has: 6 formulas.

0

SUB CODE: 07, 20/ SUBM DATE: 17Nov65/ ORIG REF: 003/ OTH REF: 004/ ATL. PRESS: 5103

Card 3/3 eight

KARAPEN, V. I. - Density of LiOH/Na<sub>2</sub>O. No. 2

Method for measuring the density of liquids within a  
wide temperature range. Tsvet. i skler. khim. i no. 4:551-553  
1965. (MTRA 18:10)

2. Subject Field: AN INSTRUMENT.

SNTS NLLA, N. I.

"Investigating the Colorimetric Method of Determining Aluminim With  
Aluminol." Cand Chem Sci, Ural Polytechnic Inst, Sverdlovsk, 1954. (ZhNIL, No 6, Mar 55)

So: Sci. No 670, 29 Dept 55 - Survey of Scientific and Technical Dissertations  
Defended at USSR Higher Educational Institutions. (15)

137-58-6-11837

Translation from Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 93 (USSR)

AUTHORS Tsekhan'skiy, M.I., Shishkina, N.I., Khusnoyarov, K.B.

TITLE Changes in the Radioactivity of Nonmetallic Inclusions in Steel  
Upon Electrolysis (Izmeneniye radioaktivnosti nemetallicheskikh vklucheniy v stali pri elektrolize)

PERIODICAL Byul. nauchno-tekhn. inform. Ural'skiy n.-i. in-t chernykh metallov, 1957, Nr 3, pp 102-108

ABSTRACT: Isotope Ca<sup>45</sup> was introduced into runner brick during the pouring of 500-kg ingots of rimmed steel. Specimens to be used for separation of nonmetallic inclusions (NI) by the electrolytic method were selected from strip 32-mm thick, and decomposition of the carbides in the NI precipitate was done with the aid of KMnO<sub>4</sub> and ammonium persulfate. Preliminary investigation of the ratio of active refractory to various oxidizing reactants revealed the absence of change in the activity and weight of the refractory upon treatment with these reactants. It was established that the amount of NI resulting from destruction of the refractories does not exceed 2.8%, while 46% of all the samples measured had zero activity. Measurement of the

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137-58-6-11837

Changes in the Radioactivity (cont.)

activity of the NI before and after separation from the metal, and also measurement of the activity of NI mechanically separated from steel and of slags having compositions close to those of the NI (the measurement being done before and after treatment by various electrolytes) showed that the refractory does not lose its activity in the process of electrolyte treatment, while the products of its reaction with molten metal are destroyed and lose their activity, reduction in the activity of the slags under these conditions being from 519 to 421-90 impulses per min. Further treatment with electrolytes and reactants to destroy the carbides of slags taken from the surface of the metal in the mold confirmed the results obtained and showed that the loss of weight by the slag, attaining 9-18%, occurs primarily during the process of electrolysis. Bibliography: 8 references.

A.Sh.

- 1. Steel--Production
- 2. Steel--Impurities
- 3. Carbides--Decomposition
- 4. Electrolysis--Applications
- 5. Refractory materials--Chemical reactions
- 6. Steel--Chemical reactions
- 7. Calcium isotopes (Radioactive)--Applications

Card 2/2

137-58-6-13873

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 380 (USSR)

AUTHOR: Shishkina, N.I.

TITLE: Determination of Small Quantities of Aluminum in Steel (Opre-  
deleniye malykh kolichestv alyuminiya v stali)

PERIODICAL: Byul. nauchno-tekhn. inform. Ural'skiy n.-i. in-t chernykh  
metallov, 1957, Nr 3, pp 173-182

ABSTRACT: A technique for the determination of Al in steel with alumina (I) is proposed. Conditions of colorimetric analysis of Al with I are critically investigated. One g of steel is dissolved in 10 cc HCl (1:1) and oxidized with HNO<sub>3</sub> (sp. gr. 1.40); the solution is evaporated down to 5 cc and poured into a 100-cc flask with 30 cc of 30% NaOH or KOH solution, raised up to the mark with water, and filtered. Five cc of filtrate are neutralized to phenolphthalein with HCl (1:1), 1-2 drops of HN<sub>4</sub>OH (1:1) are added until the appearance of a pink coloration, then 10 drops of 60-80% CH<sub>3</sub>COOH, and 2 cc of 0.1% solution I are added, and the whole is brought to 100 cc with water. After one hour it is measured photometrically with a green light filter. With up to 40% of Al in 100 cc of solution, the coloration

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137-58-6-13873

Determination of Small Quantities of Aluminum in Steel

complies with Beer's Law. The results of the photometric method agree well with the data obtained by five other methods. By means of the photometric method the Al contents of 15-20 test samples of steel can be determined in one working day.

Z.G.

1. Steel--Properties    2. Aluminum--Determination    3. Steel--Colorimetric analysis

Card 2/2

AUTHORS:

*Shishkin'd N.Y.*  
Tsishenskiy, M.I., Shishkina, N.I., Khusnoyarov, K.B. 32-12-20/71

TITLE:

The Investigation of the Radioactivity of Non-Metallic Impurities in Steel During Electrolysis (Izuchenie radioaktivnosti ne metallicheskikh vkljucheniy v stali pri elektrolize).

PERIODICAL:

Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 12, pp. 1440-1442 (USSR)

ABSTRACT:

The present paper discusses the possibility of determining impurities in the steel melt during the work of casting by means of radioactive isotopes. For this purpose the radioactive isotope Ca<sup>45</sup> was introduced into the refractory material of foundry equipments. From the cast metal block samples were taken at various places after relining, which were investigated electrolytically as to their content of non-metallic impurities. In the same manner also the samples were taken of the radioactivated refractory material of the foundry system. It was found in this connection that, after a number of casting processes, the radioactivity of the refractory material remained unchanged, and that the non-metallic impurities of the cast metal, which were precipitated in the metal solution, showed hardly any radioactivity after electrolysis. A slight radioactivity of 1-1.6% could in this case be explained by the wear (destruction of the surface) of the radicactivated refractory material. In the same manner

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The Investigation of the Radioactivity of Non-Metallic Impurities in Steel During Electrolysis

32-12-20/71

the film (slag) forming on the boiling metal was investigated. From the table of results it may be seen that the slags, which were specially radioactivated, passed into the solution with electrolysis and lost 20% of their radioactivity; otherwise, slags behaved in the same manner as the non-metallic impurities in the metal. The conclusion is drawn that, as may be seen from the present paper, the application of the Ca-isotope is unsuited as indicator for non-metallic impurities in metal. Statements hitherto made in publications to the effect that non-metallic impurities detectable in cast metal are only in a small degree due to the wear products of the refractory materials of foundry plants found no confirmation. There are 3 tables and 2 Slavic references.

ASSOCIATION: Ural'sk Scientific Research Institute for Iron Metallurgy (Ural'skiy nauchno-issledovatel'skiy institut chernoy metallurgii).

AVAILABLE: Library of Congress

Card 2/2 1. Steel-Impurites-Determination 2. Electrolytic investigations  
3. Radioactive isotopes-Applications

S/137/61/000/012/133/149  
A006/A101

AUTHORS: Shishkina, N.I., Tsekhan'skiy, M.I., Karel'skaya, T.A.

TITLE: The behavior of radioactive isotopes during the separation of non-metallic impurities from steel by the method of electrolytic dissolving

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 12, 1961, 36-37, abstract 12I287 ("Byul. nauchno-tekhn. inform. Ural'skiy n.-i. in-t chern. metallov", 1960, no. 8, 96 - 102)

TEXT: A stable radioactive tracer was selected. Slags of six different chemical compositions were investigated; they contained Ca, Ce, W and Zr radioactive isotopes. During the separation of radioactive-isotope-containing non-metallic impurities from the steel, and during the processing of deposits by various reagents, their components and the radioactive isotopes are dissolved. As a result the aforementioned isotopes can not be used as tracers to determine the content of non-metallic impurities in steel. It is pointed out that the

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S/137/61/000/012/133/1<sup>49</sup>  
A006/A101

The behavior of radioactive isotopes ...

existing methods of determining the amount and composition of non-metallic impurities do not yield data characteristic of the true composition of non-metallic impurities.

I. Nikitina

[Abstracter's note: Complete translation]

Card 2/2

PETROV, K.M.; DYAKONOV, V.I.; FADEYEV, I.G.; SEMENENKO, P.P.; KRYUKOV, L.G.;  
Prinimali uchastiye: PASTUKHOV, A.I.; SHISHKINA, N.I.;  
PAZDNIKOVA, T.S.; CHIRKOVA, S.N.; KAREL'SKAYA, T.A.; LOPTEV, A.A.;  
DZEMYAN, S.K.; ISUPOV, V.F.; BELYAKOV, A.I.; GUDOV, V.I.;  
SUKHMAN, L.Ya.; SLESAREV, S.G.; GOLOVANOV, M.M.; GLAGOLENKO, V.V.;  
ISUPOVA, T.A.; ZYABLITSEVA, M.A.; KAMENSKAYA, G.A.; POMUKHIN, M.G.;  
UTKINA, V.A.; MANEVICH, L.G.

Vacuum treatment of alloyed open hearth steel. Stal' 22 no.2:113-  
117 F '62.  
(MIRA 15:2)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov  
(for Pastukhov, Shishkina, Paznikova, Chirkova, Karel'skaya,  
Loptev, Dzemyan). 2. Metallurgicheskiy kombinat im. A.K. Serova  
(for Isupov, Belyakov, Gudov, Sukhman, Slesarev, Golovanov,  
Glagolenko, Isupova, Zyablitseva, Kamenskaya). 3. 6-y Gosudar-  
stvennyy podshipnikovyy zavod (for Pomukhin, Utkina, Manevich).

(Steel—Metallurgy)  
(Vacuum metallurgy)

TEPLOUKHOV, Valeriy Ivanovich; SHISHKINA, N.I., retsenzent; KRYZHOVA,  
M.L., red. izd-va; MAL'KOVA, N.T., tekhn. red.

[Analysis of open-hearth and electric furnace slags] Analiz marte-  
novskikh i elektropechnykh shlakov. Sverdlovsk, Metallurgizdat,  
1962. 76 p. (MIRA 15:6)

(Slag--Analysis)

TSEKHANSKIY, M.I., kand.tekhn.nauk; SHISIKINA, N.I., kand.khimicheskikh nauk; Prinimali uchastiye: KHUSNOYAROV, K.B.; KAREL'SKAYA, T.A.

Radiometric study of the effect of refractories on the presence of nonmetallic inclusions in steel. Stal' 22 no.1:66-67 Ja '62. (MIRA 14:12)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov.  
(Steel--Defects)  
(Radioisotopes--Industrial applications)

ROMANOVA, V.S.; SHISHKINA, N.I.

Determination of cobalt by the potentiometric method. Zav.  
lab. 31 no.8:945 '65. (MIRA 18:9)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov.

- 1. 1953 Russian Acquisitions, Library of Congress, March 1953. Unclassified.
- 2. 1953 Russian Acquisitions, Library of Congress, March 1953. Unclassified.
- 3. 1953 Russian Acquisitions, Library of Congress, March 1953. Unclassified.
- 4. 1953 Russian Acquisitions, Library of Congress, March 1953. Unclassified.
- 5. 1953 Russian Acquisitions, Library of Congress, March 1953. Unclassified.
- 6. 1953 Russian Acquisitions, Library of Congress, March 1953. Unclassified.
- 7. 1953 Russian Acquisitions, Library of Congress, March 1953. Unclassified.
- 8. 1953 Russian Acquisitions, Library of Congress, March 1953. Unclassified.
- 9. Monthly List of Russian Acquisitions, Library of Congress, March 1953. Unclassified.

SHISHKINA, N., kandidat tekhnicheskikh nauk.

Determining sausage output by the weight of dry substances. Mias.ind.  
SSSR 25 no.2:31-32 '54. (MLRA 7:5)  
(Sausages)

LAVROVA, L.P., kandidat tekhnicheskikh nauk; LYASKOVSKAYA, Yu.N., kandidat tekhnicheskikh nauk; SHISHKINA, N.N., kandidat tekhnicheskikh nauk; DYKLOP, V.K., kandidat biologicheskikh nauk; IVANOVA, A.A., mлад-  
ший научный сотрудник; KALENOVA, M.S.; DUBROVINA, L.I.; POLETAYEV,  
T.N.

Protective coating for sausages. Trudy VNIIMP no.7:48-67 '55.  
(MLRA 9:8)  
(Sausages) (Protective coatings)

SHISHKINA, N.

✓ Electrical characteristics of meat products during treatment in an electrical field of high voltage. B. Telishevskii and N. Shishkina. *Myasnaya Ind. S.S.R.* 27, No. 3, 13-14 (1958). — The rate of heating lard (4-5% moisture)

Med 3

in an elec. field of high voltage is much greater than that of muscle tissues (73-8% moisture). Dielectric penetration of meat products under the same exptl. conditions is related directly to the moisture content of the products. E. W.

SHISHKINA, N., kandidat tekhnicheskikh nauk; KALENOVA, M., inzhener.

~~Production of smoked pork products. Mias.ind.SSSR 28 no.1:6-8  
'57.~~ (MIRA 10:3)  
(Meat, Smoked)

54(1)

AUTHOR: Vologdin, V. V.

TITLE: 327, 142-2-1-20-22

A Conference on Electrical Food Processing Methods  
(Konferentsiya po elektricheskim metodam obrabotki  
pishchevikh produktov)PERIODICAL: Izvestiya vuzov. Nauk po pishchevym i lesnoym  
tekhnologiyam, 1959, Vol. 2, No. 1, pp. 120-121 (USSR)ABSTRACT: A conference on electrical food processing methods  
was held in Kiev from 7 to 13 October 1958. The  
conference was organized by the Kievsky Institute of  
Gidroelektricheskoy i elektrokhimicheskoy tekhniki (USSR  
Academy of Sciences). The conference comprised a wide range of  
problems and the novelty of the subjects caused  
great interest of workers from scientific institu-  
tions and industrial installations. The 350 dele-  
gates came from 60 towns of the USSR. 119 partic-  
ipants were sent to the conference from  
scientific research institutions. At the conference and  
more than 50 reports were delivered and discussed,  
dealing with problems of applying electrodynamic  
fields, direct current, low frequency current, high  
frequency current, infrared, ultraviolet, radia-  
tion, X-ray and gamma radiation for preserving  
food products. Also statements were made concern-  
ing the application of ultrasound oscillations in  
the food industry. Considerable attention was de-  
voted to the application of DC (tok vyezkoj  
sistemotnosti - high frequency current) for technolog-  
ical purposes, particularly for processing non-con-  
ductive materials in an electric high frequency  
field. More than 20 reports and statements were  
delivered on this subject dealing with theoretical  
and technological problems. For example, the  
electrotechnical properties of some food products in High  
Frequency Fields by S. N. Andreyev, V. A. Budin, A.  
V. Matsushin (Moscow); "Active Lasers in Food Pro-  
duction" by S. Pavlyuk (Kiev); "The Electrical  
Properties of Meat" by I. S. Pavlyuk (Kiev);  
"Card 1/5" "A Continuous Automatic High Frequency  
Sterilizer for the Sterilization of Fruit Conserva-  
tion" by N. D. Chernyavskiy (Moscow); "The  
Derusting of Spiced Sauces by High Frequency Cur-  
rents" by V. M. Polosulov (Asturkhan); "The High  
Frequency Heating of Electrically Smoked Fish" by  
A. I. and M. K. Kulinina and I. S. Pavlyuk (Kiev);  
"The Technological Peculiarities of Processing  
Sausage Products by High Frequency Currents" by  
E. N. Shishkina (Moscow). At the conference the fol-  
lowing reports were heard with great interest and  
were discussed in detail: "The Application of In-  
frared Heating for Drying of Confectionery Pro-  
ducts" by M. S. Mel'nikovskiy (Riga); "The Techno-  
logical Principles of the Hot Electrical Pitch Sack-  
ing Process" by A. I. and M. K. Kulinina and I. S.  
Pavlyuk (Kiev); "New Blister Processing Technology  
and the Processing of Sardines and Sardine Oil with the  
Application of Infrared Light and Sealing Liquid" by  
I. L. Fischkin (Moscow); "The VNIRO Experimental  
Equipment for Ionization Processing of Food Products"  
by A. I. Chernyavskiy (Moscow); and "An Investigation  
of the Possible Application of Radioactive Radia-  
tions for Preserving the Albuminous Residue of Inter-  
gumentary Whale Fat" by S. I. Terpilov (Leningrad).

ABSTRACT:

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The conference was organized by the Kievsky Institute of  
Gidroelektricheskoy i elektrokhimicheskoy tekhniki (USSR  
Academy of Sciences). The conference comprised a wide range of  
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food products. Also statements were made concern-  
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ductive materials in an electric high frequency  
field. More than 20 reports and statements were  
delivered on this subject dealing with theoretical  
and technological problems. For example, the  
electrotechnical properties of some food products in High  
Frequency Fields by S. N. Andreyev, V. A. Budin, A.  
V. Matsushin (Moscow); "Active Lasers in Food Pro-  
duction" by S. Pavlyuk (Kiev); "The Electrical  
Properties of Meat" by I. S. Pavlyuk (Kiev);  
"Card 1/5" "A Continuous Automatic High Frequency  
Sterilizer for the Sterilization of Fruit Conserva-  
tion" by N. D. Chernyavskiy (Moscow); "The  
Derusting of Spiced Sauces by High Frequency Cur-  
rents" by V. M. Polosulov (Asturkhan); "The High  
Frequency Heating of Electrically Smoked Fish" by  
A. I. and M. K. Kulinina and I. S. Pavlyuk (Kiev);  
"The Technological Peculiarities of Processing  
Sausage Products by High Frequency Currents" by  
E. N. Shishkina (Moscow). At the conference the fol-  
lowing reports were heard with great interest and  
were discussed in detail: "The Application of In-  
frared Heating for Drying of Confectionery Pro-  
ducts" by M. S. Mel'nikovskiy (Riga); "The Techno-  
logical Principles of the Hot Electrical Pitch Sack-  
ing Process" by A. I. and M. K. Kulinina and I. S.  
Pavlyuk (Kiev); "New Blister Processing Technology  
and the Processing of Sardines and Sardine Oil with the  
Application of Infrared Light and Sealing Liquid" by  
I. L. Fischkin (Moscow); "The VNIRO Experimental  
Equipment for Ionization Processing of Food Products"  
by A. I. Chernyavskiy (Moscow); and "An Investigation  
of the Possible Application of Radioactive Radia-  
tions for Preserving the Albuminous Residue of Inter-  
gumentary Whale Fat" by S. I. Terpilov (Leningrad).

Card 2/5

"Card 2/5" "A Continuous Automatic High Frequency  
Sterilizer for the Sterilization of Fruit Conserva-  
tion" by N. D. Chernyavskiy (Moscow); "The  
Derusting of Spiced Sauces by High Frequency Cur-  
rents" by V. M. Polosulov (Asturkhan); "The High  
Frequency Heating of Electrically Smoked Fish" by  
A. I. and M. K. Kulinina and I. S. Pavlyuk (Kiev);  
"The Technological Peculiarities of Processing  
Sausage Products by High Frequency Currents" by  
E. N. Shishkina (Moscow). At the conference the fol-  
lowing reports were heard with great interest and  
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frared Heating for Drying of Confectionery Pro-  
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logical Principles of the Hot Electrical Pitch Sack-  
ing Process" by A. I. and M. K. Kulinina and I. S.  
Pavlyuk (Kiev); "New Blister Processing Technology  
and the Processing of Sardines and Sardine Oil with the  
Application of Infrared Light and Sealing Liquid" by  
I. L. Fischkin (Moscow); "The VNIRO Experimental  
Equipment for Ionization Processing of Food Products"  
by A. I. Chernyavskiy (Moscow); and "An Investigation  
of the Possible Application of Radioactive Radia-  
tions for Preserving the Albuminous Residue of Inter-  
gumentary Whale Fat" by S. I. Terpilov (Leningrad).

Card 3/5

"Card 3/5" "A Continuous Automatic High Frequency  
Sterilizer for the Sterilization of Fruit Conserva-  
tion" by N. D. Chernyavskiy (Moscow); "The  
Derusting of Spiced Sauces by High Frequency Cur-  
rents" by V. M. Polosulov (Asturkhan); "The High  
Frequency Heating of Electrically Smoked Fish" by  
A. I. and M. K. Kulinina and I. S. Pavlyuk (Kiev);  
"The Technological Peculiarities of Processing  
Sausage Products by High Frequency Currents" by  
E. N. Shishkina (Moscow). At the conference the fol-  
lowing reports were heard with great interest and  
were discussed in detail: "The Application of In-  
frared Heating for Drying of Confectionery Pro-  
ducts" by M. S. Mel'nikovskiy (Riga); "The Techno-  
logical Principles of the Hot Electrical Pitch Sack-  
ing Process" by A. I. and M. K. Kulinina and I. S.  
Pavlyuk (Kiev); "New Blister Processing Technology  
and the Processing of Sardines and Sardine Oil with the  
Application of Infrared Light and Sealing Liquid" by  
I. L. Fischkin (Moscow); "The VNIRO Experimental  
Equipment for Ionization Processing of Food Products"  
by A. I. Chernyavskiy (Moscow); and "An Investigation  
of the Possible Application of Radioactive Radia-  
tions for Preserving the Albuminous Residue of Inter-  
gumentary Whale Fat" by S. I. Terpilov (Leningrad).

SUBMITTED: November 3, 1958

Card 5/5

SHISHKINA, N.N., kand.tekhn.nauk; SOLOV'YEV, V.I., kand.khimicheskikh nauk  
KURKO, V.I., kand.tekhn.nauk; DUBROVINA, L.I., mladshiy nauchnyy  
sotrudnik; SHCHEGOLEVA, O.P., mladshiy nauchnyy sotrudnik.

Intensified coloration of sausages cooked in an alternating  
electric field of high frequency, and the frying of sausages  
with the use of smoke solutions. Trudy VNIIMP no.9:50-62  
'59. (MIRA 13:8)

(Sausages)

SHISHKINA, N.N., kand. tekhn. nauk; ZBANDUTO, L.L., inzh.; KHOKHLOVA, Z.V., inzh.; KUKHARKOVA, L.L., starshiy nauchnyy sotrudnik; IL'YASHENKO, M.A., kand. veterin.nauk

Investigating the physicochemical and bacteriological changes in packaged meat. Trudy VNIIMP no.12:71-82 '62. (MIRA 18:2)

BOLOTINA, F.Ye.; GAMBAIKYAN, Kh.P.; DENISOVA, G.A.; DUBROVINA, L.I.; KOZHINA, I.S.; KYURKCHAN, V.N.; MAKAROVA, T.I.; PAVLOVA, U.G.; REZVETSOV, O.A.; SKIRNOVA, V.V.; SURZHIN, S.N., kand. tekhn. nauk; TAMAMSHYAN, S.G.; TRUSOVA, S.A.; FILOGRIYEVSKAYA, Z.D.; CHINENOVA, E.G.; SHISHKINA, N.N.; IL'IN, M.M., zasl. deyatel' nauki RSFSR, doktor biol. nauk prof., red.; PRITYKINA, L.A., red.; ZARSHCHIKOVA, L.N., tekhn. red.

[Spice and aromatic plants of the U.S.S.R. and their use in the food industry] Priano-aromaticheskie rastenia SSSR i ikh ispol'zovanie v pishchevoi promyshlennosti. Moskva, Pishchepromizdat, 1963. 430 p. (MIRA 17:2)

SHISHKINA, N.N., kand. tekhn. nauk; KHOKHLOVA, Z.V.; ZBANDUTO, L.I.

Synthetic sausage casings. Trudy VNIIMP no.16:156-160 '64.  
(MIRA 18:11)

1. Starshiye inzhenery Vsesoyuznogo nauchno-issledovatel'skogo  
instituta myasnoy promyshlennosti (for Khokhlova, Zbanduto).

SHISHKINA, N.N., kand. tekhn. nauk; ZBANDUTO, L.L.

Production of frozen second course dishes in polymer films.  
Trudy VNIIMP no.16:161-167 '64. (MIRA 18:11)

1. Starshiy inzhener Vsesoyuznogo nauchno-issledovatel'skogo  
instituta myasnoy promyshlennosti (for Zbanduto).

SHISHKINA, N.N., kand. tekhn. nauk; ZBANDOTO, L.L., inzh.;  
KHOKHLOVA, Z.V., inzh.; IL'YASHENKO, M.A., kand. veter. nauk

Studying the physicochemical and bacteriological changes in  
packaged ready-to-cook meat products. Trudy VNIIIMP no.16:168-  
182 '64. (MIRA 18:11)

CA

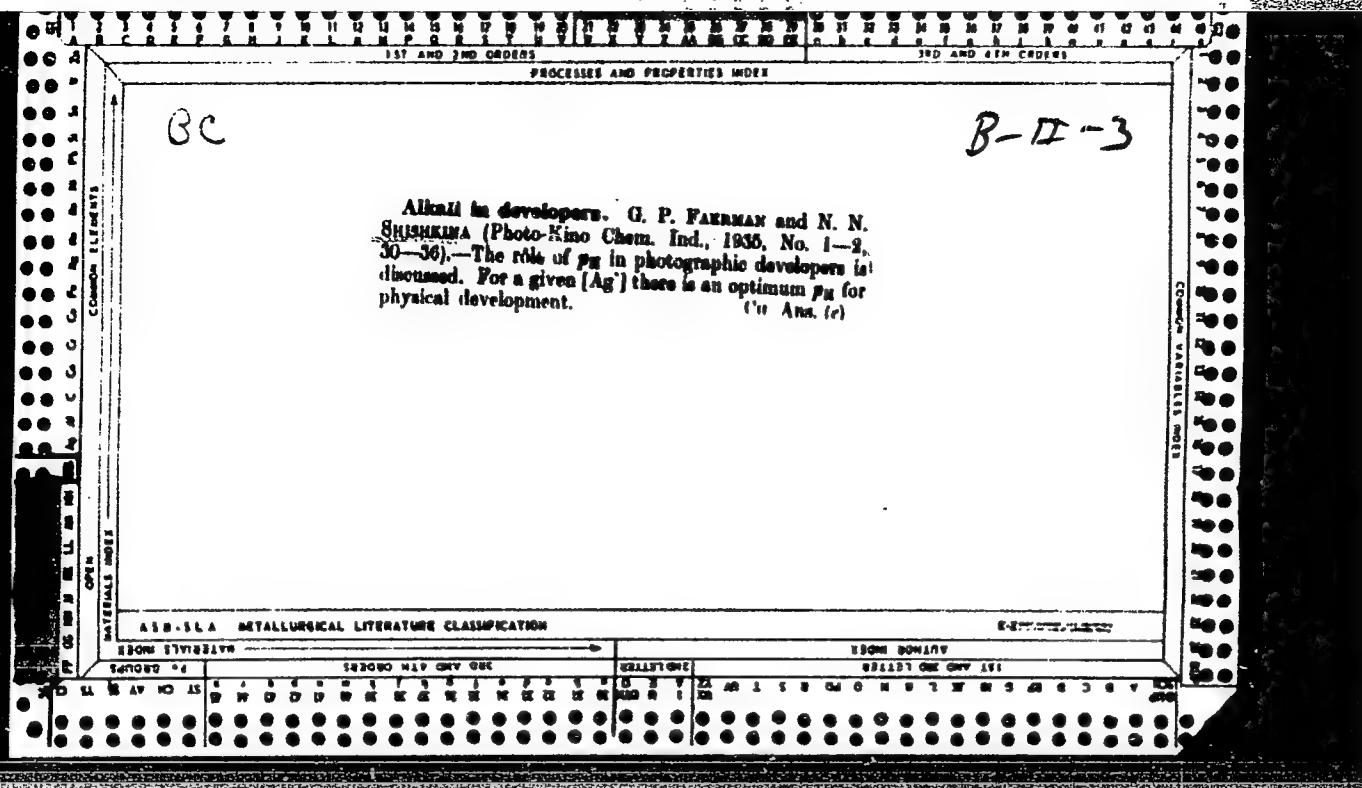
5

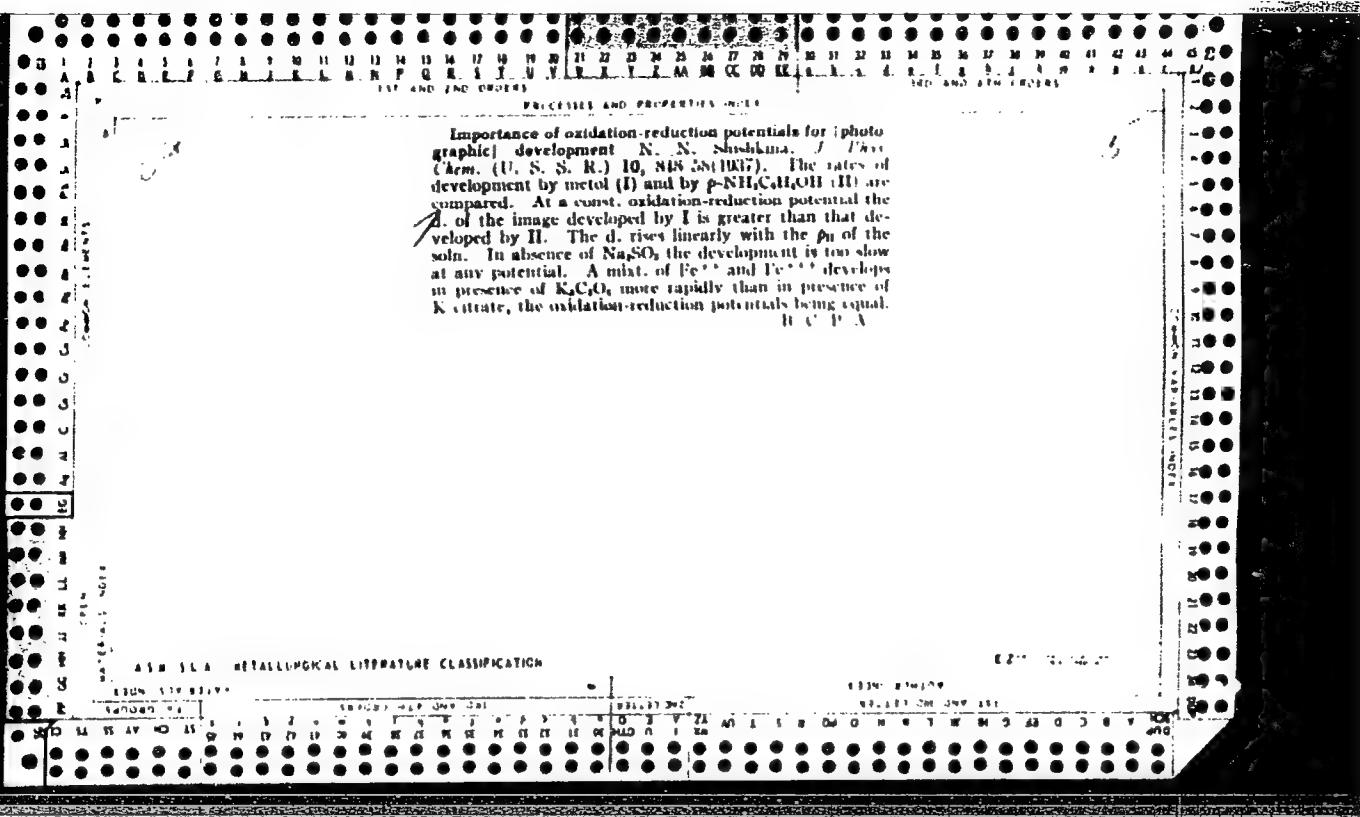
The role of alkali in [photographic] development. G. P. FAERMAN AND N. N. SHISHKINA. *J. Phys. Chem. (U. S. S. R.)* 3, 390-405 (1932). Developer action is independent of the particular alkali used but dependent on the H-ion concn. NaOH, KOH, Na<sub>2</sub>CO<sub>3</sub>, K<sub>2</sub>CO<sub>3</sub> with borate, phosphate and acetate buffers and a metol developer were used. Buffer action决定了 the constancy of action of the developer. Six tables and six graphs give the results.

F. H. RAUBMAN

ASM-51-A METALLURGICAL LITERATURE CLASSIFICATION

The function of alkali in a developer. II. Physical developing. G. P. Faerman and N. N. Shishkina. *J. Phys. Chem. (U. S. S. R.)* 5, 430-433 (1931); *ibid.* 20, 1652. --With const. Ag<sup>+</sup> concn., the rate of phys. development and the rate of reduction of the Ag<sup>+</sup> in soln. decreases or increases with decreasing or increasing  $pH$ . For each Ag<sup>+</sup> concn. in the soln. there is an optimum  $pH$  for the developer. If the systems Ag<sup>+</sup>-Ag and oxidation-reduction have the same p. d., the velocity of development is independent of the  $pH$ . Only on longer drawn-out development do factors other than  $pH$ , such as concn. of Ag<sup>+</sup> ions, of developer, of acid anions, etc., have any effect. The expts. were carried out mainly on "Agfa" films with metol-citric acid developers in a  $pH$  from 1.6 to 3.0. III. An iron developer. *Ibid.* 404-5. In a ferro-ferric oxalate developer the developing influence remains const. over the same interval of  $pH$  as does the oxidation-reduction potential, i. e., from  $pH = 4-7$ .  
F. H. Rathmann





14  
34

Oxidation-Reduction Potentials of Developers and  
Rates of Development at Different Temperatures. (In  
Russian.) N. N. Shishkina. Zhurnal Fizicheskoi  
Khimii (Journal of Physical Chemistry), v. 21, Mar.  
1948, p. 331-338.

Results show that the reaction of p-aminophenol  
and methyl p-aminophenol during development is  
related to the oxidation-reduction potential of the  
developer. Dependence on pH and temperature  
permits substitution of the above chemicals for  
each other. 15 ref.

The oxidation-reduction potential of a developer and the rate of development at different temperatures. N. N. Shishkina (Optical Inst., Leningrad). *J. Phys. Chem. (U.S.S.R.)* 22, 331-8 (1918) (in Russian). Exposed x-ray films were developed at 19, 15, 20, and 25° with either (a) a  $\rho$ -aminophenol developer at pH 10.3 and, in parallel expts. with a metol developer at a pH varying from 9.1 to 9.6, or (b) a metol developer at pH 10.3 and, in parallel expts., with a  $\rho$ -aminophenol developer at a pH varying from 11.8 to 11.2. The variable pH was every time adjusted so that the oxidation-reduction potentials  $V$  were equal in 2 parallel expts. Then, the rates  $r$  of development in 2 parallel expts. also were almost equal when the exposure varied in the ratio 1:100 and the duration of development from 4 to 24 min. In this instance,  $V$  determined. Comparison of series (a) with series (b) shows that  $r$  is a linear function of  $V$ . These results show what compn. of metol developers is necessary to duplicate the  $r$  observed with  $\rho$ -aminophenol developers, and vice versa.

THE VERSE.

## ASM-SEA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R001549610009-6"

The role of pH in the development of color emulsions.  
G. P. Faerman and N. N. Skishkina: *Zhur. Fiz. Khim.* 25, 1026-32 (1951).—At const. exposure and developing time, the Ag image d. increases linearly with pH (cf. *C.A.* 27, 1434; 32, 8287). The same relation holds for dye image d. of Agfacolor pos. and neg. film. The spectrophotometric curves between 400 and 700 m $\mu$  present 3 max., the positions of which do not change with time of exposure or pH of developer. The optical d. of the dyes in the 3 layers can be characterized by these max., and the relative concn. of dye in each layer can be calcd. as shown by Gorokhovskii, et al. (*C.A.* 46, 4401a). For the pos. film, a linear relation between pH (between 8.8 and 11.3) and d. at  $\lambda = 440, 530$ , and 670, resp., is found or between pH and relative concn. of dye in each layer. For the neg. film, the same linear relations hold at a pH of 9.1 to 11.8 at  $\lambda = 440, 530$ , and 690, resp. Consequently, the amt. of reduced Ag is proportional to the amt. of dye produced. Also, the principles of the electrochem. theory of development must remain valid for color emulsions. Michel Boudart

SHISHKINA, N. N.

3

Electron-Microscopical Investigation of Developed Grains of a Photographic Emulsion. G. P. FARBER and N. N. SHISHKINA. *J. Appl. Chem. U.S.S.R.*, 1952, 25, 776-781. Electron-microphotographs of chemically developed silver grains show that physical development occurs at the same time, especially when the developer is capable of dissolving silver halides to form complex compounds which are easily reducible. Photographic fogging appears to be a crystallization of large particles of metallic silver, similar to those obtained in physical development, only smaller in size. *Brit. Abs.*

SHISHKINA, N.N.

FAYERMAN, G.P.; SHISHKINA, N.N.

Role of alkali in color film development. Usp.nauch.fot, 2:63-71 '54.  
(MLRA 7:5)

(Photographic chemistry) (Color photography--Developing and  
developers)

SEARCHED 1960/77

Refile

was  
met

V Dependence of the developing process on time. N.N.  
Shishikina, Uspekhi Nauk. Pol., Akad. Nauk S.S.R.  
Otdel. Khim. Nauk 3, 195-203 (1955).—The data suggested that the compn. of 2 different developers which give equiv. developing results at different temps. could be detd. by calcn.  
Eurilla Mayerle

FAYERMAN, G.P.; SHISHKINA, N.N.

Study of the rate of reduction of silver ions with developers.  
Usp.nauch.fot. no.4:164-176 '55. (MLRA 9:4)  
(Photography--Developing and developers)

S/075/60/015/004/011/030/XX  
B020/B064

AUTHOR: Shishkina, N. N.

TITLE: Determination of Small Amounts of Silver in a Developed  
Photograph

PERIODICAL: Zhurnal analiticheskoy khimii, 1960, Vol. 15, No. 4,  
pp. 431 - 436

TEXT: A quick and simple method of determining silver in the individual fields of the developed and fixed "sensitogram", obtained from an ФСР-4 (FSR-4) sensitometer, is necessary for the study of several problems of the theory of the photographic process. By this method it must be possible to determine approximately  $1.10^{-5}$  g of metallic silver on an area of approximately  $0.4 \text{ cm}^2$  with an accuracy of at least 10%; the gelatin in the film is not allowed to exert a disturbing effect, and the time of analysis should not be more than a few hours. The photometric method with dimethyl amino benzylidene rhodanine as a reagent for the silver ion is best suited for this purpose. To measure the light absorption of silver rhodanine

Card 1/3

Determination of Small Amounts of Silver in a Developed Photograph S/075/60/015/004/011/030/xx  
B020/B064

suspensions, a photoelectric differential colorimeter with selenium photo-cells ( $\Phi\beta K$ -M (FEK-M)) was used. The absorption maximum of the suspensions was found at 470 - 480  $\text{m}\mu$ , and the best light filter in this case was a blue filter of CC-8 (SS-8) glass. The optimum concentrations in the measuring solution were 0.095 N  $\text{HNO}_3$  and 0.00075% rhodanine. The presence

of gelatin has no disturbing effect on the rhodanine method.  $0.004 \gamma\text{Ag}/\text{ml}$  was found to be the minimum. The error in silver determination varies from 1 to 6%. Measurements were made at silver concentrations of  $0.15 - 1.8 \gamma/\text{ml}$  (Table 1). The reproducibility of determinations is shown by the agreement of the calibration curves (Fig. 1) obtained on several days, as well as by the errors of determination (Table 2) found in the parallel experiments. In addition, Table 2 gives the results of parallel determinations of silver at different points of the uniformly exposed layer, the mean error being 3 - 4%. Fig. 1 indicates that the Beer law holds in the concentration range of from  $0.004$  to  $1 \gamma\text{Ag}/\text{ml}$ . Table 3 gives the values recommended for the amount of nitric acid, which have to be added to dissolve silver at different silver contents of the emulsion. Moreover, the final volumes of the solutions analyzed are given, in the different portions of which

Card 2/3

TEREKHOVA, R. K.; SHISHKINA, N. N.

Quantitative determination of nitrates in alkaline solutions.  
Izv. vys. ucheb. zav.; khim. i khim. tekhn. 5 no.5:848-850  
'62. (MIRA 16:1)

1. Saratovskiy gosudarstvennyy universitet i Saratovskiy zavod  
shchelochnykh akkumulyatorov.

(Nitrates) (Alkalies)

FAYERMAN, G.P.; SHISHKINA, N.N.

Effect of the developer's pH on the quantity of developed silver  
in a developed layer. Zhur.nauch.i prikl.fot.i kin. 7 no.1:26-29  
Ja-F '62. (MIRA 15:3)

1. Gosudarstvennyy opticheskiy Institut imeni S.I.Vavilova.  
(Photography--Developing and developers)

SHISHKINA, N.N.

Effect of the difference of potentials and of the developing time  
on the changes occurring in the quantity of developed silver. Zhur.  
nauch.i prikl.fot.i kin. 7 no.1:61-62 Ja-F '62. (MIKA 15:3)

1. Gosudarstvennyy opticheskiy institut imeni S.I.Vavilova.  
(Photography--Developing and developers)

SHISHKINA, N.N.

Effect of the properties of the emulsion layer on developing  
results. Zhur.nauch.i prikl.fot.i kin. 7 no.4:257-261 Jl-Ag  
'62. (MIRA 15:8)

1. Gosudarstvennyy opticheskiy institut imeni S.I.Vavilova.  
(Photography--Developing and developers)  
(Photographic emulsions)

SHISHKINA, Nona Nikolayevna; NAZAROV, Arkadiy Stepanovich;  
LETSICOV, D.V., rezensent; GUL', V.Ye., rezensent;  
D'YAKONOVA, T.F., spets. red.; NOZDRINA, V.A., red.

[Use of polymeric films for the packaging of meat products] Primenenie polimernykh plenok dlia upakovki miaso-  
produktes. Moskva, Fishchevaia promyshlennost', 1965.  
(MIRA 18:7)  
131 p.

L 46145-66 EWT(m)/EWP(j)/I IJP(c) WW/RM  
ACC NR: AP6026738 (A)

SOURCE CODE: UR/0183/66/000/003/0042/0043

AUTHOR: Serkov, A. T.; Budnitskiy, G. A.; Chivilikhina, M. P.; Veretennikova, T. P.;  
Shishkina, N. P.; Kondrashova, I. A.; Muravleva, L. V.; Ordina, V. I.

ORG: VNIIV

TITLE: Improving the quality of viscose cord

SOURCE: Khimicheskiye volokna, no. 3, 1966, 42-43

TOPIC TAGS: cellulose, synthetic material, cellulose plastic, synthetic fiber

ABSTRACT: The details of a modified procedure for manufacturing high tensile strength viscose cords are described. In essence, the procedure consists of accelerated processes of coagulation, filtration, and cord forming. It also requires the use of high purity reagents: sulfuric acid (GOST 2184-59), and ethylene oxide- and aliphatic amine derivatives as modifiers. The modified procedure does not require any new machines, only a minor adjustment of the cord spinning procedure. It is claimed that the modified procedure is capable of yielding viscose cords with tensile strength by 50-60% greater than that manufactured elsewhere in the world. Orig. art. has: 2 figures.

SUB CODE: 111

SUBM DATE: 28Feb66/

ORIG REF: 004

UDC: 677.463

Card 1/1 1ak

I. 24822-66 EWT(d)/EWT(m)/EWP(v)/EWP(j)/T/EWP(k)/EWP(h)/EWP(l)/ETC(m)-6  
ACC NR: AP6006955 IJP(c) (N) WW/RM SOURCE CODE: UR/0381/65/000/006/0061/0068

AUTHORS: Lange, Yu. V.; Filimonov, S. A.; Shishkina, N. V.; Pakhomov, V. V.; Veremeyenko, S. V.; Pyrkov, B. Ye.

ORG: none

TITLE: UVFD-1 defectoscope for controlling multilayered structures and nonmetallic parts

14

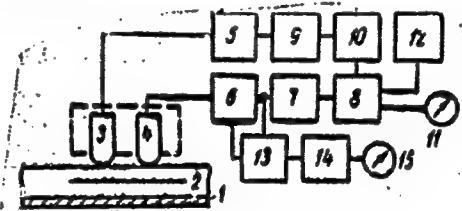
SOURCE: Defektoskopiya, no. 6, 1965, 61-68

TOPIC TAGS: defectoscope, diagnostic instrument, electric device, electronic circuit /UVFD-1 defectoscope

16 10

ABSTRACT: The block diagram and detailed electric circuitry of a UVFD-1 defectoscope are given. Referring to Fig. 1,

Fig. 1. Block diagram of a UVFD-1 defectoscope.



UDC: 620.179.16

Card 1/2

L 24822-66

ACC NR: AP6006955

the defectoscope consists of: 1 - metallic base, 2 - nonmetallic film deposit, 3 - emitting oscillator, 4 - receiving oscillator, 5 - generator to feed power to the vibrator, 6 - amplifier, 7 - shaper, 8 - phase-measuring circuit, 9 - phase regulator, 10 - shaper, 11 - needle indicator, 12 - relay instrument, 13 - detector for automatic regulating of amplification, 14 - amplitude measuring device, and 15 - indicator. The instrument has four types of scanner heads that operate on a frequency range 25--60 kcycle. A sketch is included for one such scanner head connected to the instrument by a coaxial cable. The instrument weighs 11 kg and is portable. It is used in conjunction with automatic recorders and is very useful for controlling nonmetallic film deposits on metallic bases and for identifying defects between the joints of multilayer structures. Orig. art. has: 4 figures.

SUB CODE: 14, 09/ SUBM DATE: 16Jun65/ ORIG REF: 005

Card 2/2 27

ACC NR: AP6019019

(N)

UR/0032/66/032/001/0034/0038

AUTHORS: Lange, Yu. V.; Shishkina, N. V.

39

ORG: none

B

TITLE: A study of the performance characteristics of the ultrasonic <sup>15</sup> velocimetric method of flaw detection <sup>14</sup>

SOURCE: Zavodskaya laboratoriya, v. 32, no. 1, 1966, 34-38

TOPIC TAGS: ultrasonic flaw detector, laminated plastic, elastic wave, lamination, phase meter, performance test/ UVFD-1 ultrasonic flaw detector <sup>10</sup> <sup>10</sup>

ABSTRACT: The results of experimental studies of the performance of the UVFD-1 velocimetric flaw detector are given. The probe head, which contains transmitting and receiving vibrators with a fixed distance  $\ell$  between them, is placed on the surface of the article (see Fig. 1). The elastic flexural wave from the transmitting vibrator is propagated with velocity  $v$ , which is a function of the layer thickness. The propagation velocity in a flaw is lower than in a segment without a flaw. This changes the phase of the wave. Laboratory tests were made with an M001 galvanometer and an N-700 loop oscilloscope. Tests were made with PT sheet textolite of 1360 x 740 x 10 mm. The velocimetric method can be used to detect laminations and fracture zones at a depth of up to 26 mm in laminated plastics and in structures containing nonmetallic layers.

15

Card 1/2

UDC: 620.179.16

ACC NR: AP6019019

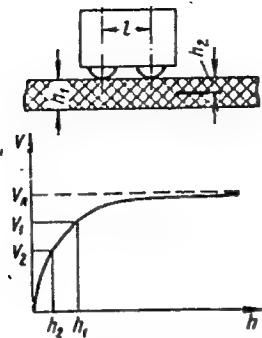


Fig. 1.  $V_R$  - limiting (surface-wave) velocity;  
 $V_1$  - propagation velocity for  $h_1$ ;  $V_2$  - propagation  
velocity for  $h_2$ .

Orig. art. has: 5 graphs and 4 formulas.

SUB CODE: 14, 11/ SUBM DATE: none/ ORIG REF: 003

Card 2/2 *egle*

SHISHKINA, N.Ya.

Split picking cam on a mechanical loom. Obm.tekh.opyt. [MLP]  
no.15:31-32 '56. (MIRA 11:11)  
(Looms)

CHIKAI, A. A. and S. SHOLINTSEV, A. A.

The role of the humoral factor in the mechanism of immunity against influenza.  
Arkh. Biol. Nauk., Ed. 59:3, 1940, Moscow. Arch. f.d. es. Virusforschung,  
Bd. 2, 1941.

SHISHINA, J.I. and SIL'VESTROV, A.A.

The role of phagocytic apparatus in the mechanism of immunity against influenza. Arch. Biol. Sciences, Bd. 59:20, 1940, Moscow. Arch. f.d. ges. Virusforschung, Bd. 2, 1941.

"Second Communication: The Role of the Phagocytol Apparatus of Actively Immunized Animals in the Control of Influenza Infections," ZhMEI, 3, 20, 1945

SHISKINA, O.I.

SMORODINTSEV, A.A.; SHISKINA, O.I.

Effect of tissue ferments on influenza virus. Trudy AMN SSSR 28:  
5-14 '53. (MIRA 7:8)

1. Iz otdela virusologii Instituta eksperimental'noy meditsiny AMN  
SSSR.

(INFLUENZA VIRUSES, effect of drugs on,  
proteolytic enzymes)

(PROTEASES, effects,  
on influenza viruses)

SHISHKINA, O.I.; YURIKAS, I.A.

Comparative evaluation of methods of laboratory diagnosis of influenza  
B. Trudy AMN SSSR 28:122-138 '53. (MLRA 7:8)

1. Iz Otdela virusologii Instituta eksperimental'noy meditsiny AMN  
SSSR.  
(INFLUENZA, diagnosis,  
laboratory technics in influenza B, comparison)

SHISHKINA, O. V.

Procedure for the Determination of Sulfate Ions in Sea Water  
Tr. In-ta okeanol. AN SSSR, 8, 1954, pp 253-268

The work is devoted to a study of a gravimetric method of determining  $\text{SO}_4^{2-}$  in sea water. The author clarifies the influence of rate of influx of  $\text{BaCl}_2$  upon the accuracy of the analysis. He finds the absolute magnitudes of the errors in the determination of  $\text{SO}_4^{2-}$  by various variants of the gravimetric method. He gives a precise procedure for the determination of  $\text{SO}_4^{2-}$  in sea water with maximum accuracy. (RZhGeol, no 3, 1955)

SO: Sum. No. 639, 2 Sep 55

SHCHAKIN, O. . .

"On the Saline Content of Silt Waters of Sea Sediments." Acad Sci USSR,  
Inst of Geochemistry and Analytic Chemistry imeni V. i. Vernadskiy, Moscow,  
1955. (Dissertation for the Degree of Candidate of Chemical Sciences.)

SO: E-72, 20 Feb 50

SHISHKINA O. V.

The question of silty sea waters. O. V. Shishkina.  
*Trudy Inst. Okeanol. Akad. Nauk S.S.R.* 13, 94-9  
(1955). -A study of sea silts is important in understanding oil fields and sedimentary rock deposits. Previous work on the watery exts. of silt is inexact owing to the exchange reactions of dissolved salts. The use of bottom scoops or probes for sampling gives better results than dredging. Results show a continuous increase of alky. and of ammonium N with depth in core samples (from breakdown of org. substance), as in previous work. Bottom water contains 0.20-0.25 meq./l. silicic acid, and horizons from 0 to 30 cm. depth contain 1.1 meq./l. Deep ppts. contain 1.3-2.2 meq./l. Si (without salt correction). The sulfate concn. is reduced, and the sulfate-chloride ratio is 0.1077 in deep ppts., compared with 0.1389 in the bottom layer of sea water. The lowered sulfate concn. is explained by its reduction to sulfide. Na is increased and Ca is noticeably decreased with increasing depth, i.e. the Ca/Cl coeff. in deeper horizons is 0.0188. The method of isolation of silt by settling and centrifugation agrees well with expression of silty water from silt at 400 kg./sq. cm. as done in this study. Long standing of hermetically sealed silty waters causes a great increase in alky. (3-10 meq./l.) and a decrease in sulfate (from 5-18.3 meq./l.). Pressures up to 3000 kg./sq. cm. can be used without altering the results. Standard micro and semimicro methods of analysis are used. A. W. D.

SHISHKINA, O.V.

Salt content of water formed in ocean-bottom sediments. Dokl. Akad. Nauk SSSR 105 no. 6: 1289-1292 D '55. (MLRA 9:4)

1. Institut okeanologii Akademii nauk SSSR. Predstavlene akademikom A.P. Vinogradovym.  
(Ocean bottom)

SHISHKINA, O. V.

A technique for securing sea silt waters and a study of their salt content. O. V. Shishkina. *Trudy Inst. Okeanol. Akad. Nauk S.S.R.* 17, 148-75 (1956).—The samples of silt waters were collected by pressing the specimens in a hydraulic press at as much as 500 kg./sq. cm. with gradually increasing pressure. Typical analyses of the solns. are given, with detailed description of the methods reported in the literature for small amounts of the various elements. Under pressure of 400 kg./sq. cm. it is possible to remove from silt contg. 50-70% moisture, some 85% of the soln. in the course of 4-6 hrs. The conventional analyses applied to silt waters give reproducibilities of: Br 1%, Na 0.5%, Ca 1.6%, Mg 2.6% for a 1-g. sample. G. M. Kosolapoff

SHISHKINA, O.V.

Sediment-containing waters of the Pacific and the adjoining seas. Dokl. AN SSSR 112 no.3:470-473 Ja '57. (MLRA 10:4)

1. Institut okeanologii Akademii nauk SSSR. Predstavлено  
академиком А.П. Vinogradovym.  
(Pacific Ocean--Sedimentation and deposition)

20-2-27/50

AUTHOR: Shishkina, O. V.

TITLE: Chloride-Sodium-Calcium Waters in the Quaternary Deposits of the Black Sea (Khloridno-natriy-kal'tsiyevyye vody v chetvertichnykh otlozheniyakh Chernogo morya)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 116, Nr 2, pp. 259 - 262 (USSR)

ABSTRACT: One of the problems set to the expedition of the Institute (see under "A" below) was the procurement and investigation of the water from long monoliths of deposits which were obtained in various depths by means of a plunger case, system Kudinov, by the expeditionary ship "Akademik Vavilov". Layers of deposits were separated out of these columns and the water pressed off them under a pressure of 400 kg/cm<sup>2</sup>. By chemical analysis it was found that beside a decreasing mineralization with increasing depth, a modification of concentration of other chief components in the amount of salt of the water also takes place, so that a water develops which differs from the marine one. Beside sulfate-free water, chloride-sodium-calcium waters were found in the Black Sea deposits. The gradual replacement of the waters of the marine type (chloride-sodium-magnesium type) by the above-mentioned ones, could be traced

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Chloride-Sodium-Calcium Waters in the Quaternary Deposits of the Black Sea

in a number of columns from smaller depths as well as from the central part of the sea. A column taken from 215 m depth on the Yalta traverse is described as example of the composition of such columns. Table 1 shows that all modifications of the salt content take place on the background of the decrease in the concentration of chlorine and in the entire mineralization. The reduction process of sulfates leads to their rapid decrease with increasing depth. It is characteristic that an increase in the alkaline reserve is absent. The pH value in the upper layer is 7,4, then it increases to 8 and remains unchanged to the end of the column. The bromine content slightly increases with increasing depth. The content of sodium and magnesium decreases with increasing depth, the content of potassium decreases still more. The ammonium content, however, strongly increases with increasing depth. The calcium content especially increases with increasing depth. The modification of concentration of Ca and Na are apparently connected with the exchange processes between the liquid and the solid phases. The exchange processes are supposedly favored by the inflow of larger amounts of clayey material into the Black Sea which contains Ca in the absorbing complex. The formation of chloride-sodium-calcium water in the deposits indicates a completely different mechanism of interaction between the liquid and the solid phases in

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SHISHKINA, O.V.

Saline composition of ooze waters of the Far East seas and the  
adjacent part of the Pacific Ocean. Trudy Inst. okean 26:109-180  
'58. (MIRA 11:10)  
(Soviet Far East--Deep-sea deposits)

SHISHKINA, O.V.

Chemical composition of interstitial waters in the Pacific  
Ocean. Trudy Inst.Okean. 33:146-164 '59. (MIRA 13:4)  
(Pacific Ocean--Water--Composition) (Deep-sea deposits)

SHISHKINA, O.V.

Sulfates in interstitial waters of the Black Sea. Trudy Inst.  
Okean. 33:178-193 '59. (MIRA 13:4)  
(Black Sea--Water--Composition) (Sulfates)  
(Deep-sea deposits)

3(9)

SOV/20-127-3-56/71

AUTHORS: Bruyevich, S. V., Shishkina, O. V.

TITLE: On the Palaeohydrology of the Black Sea During Late Quaternary

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 3,  
pp 673 - 676 (USSR)

ABSTRACT: After a short survey of publications on the investigation of the hydrology of the Black Sea basin (Refs 1,2) the authors mention a non-palaeontological method for the hydrological characterization of the geological past which was used on the expedition ship of the institute mentioned in the Association (first author) in April 1949. This method is a direct determination of the chlorine content (salt content) of the squeezed-out base solutions with which the sediments to be investigated are saturated (Ref 4). Thus a considerable decrease of the salt content in the buried waters of the Novo-Evksinskiy (New Eu-xian) Basin (up to 4‰ chlorine, 7.25‰ salt content) as compared with the recent waters near the ground (12.2-12.4‰ chlorine content) could be found. This confirms completely the assumption of N.I. Andrusov, A. D. Arkhangel'skiy and N. M. Strakhov that the Black Sea was subjected to a considerable de-

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salification during the New-Euxinian phase of its development. This was confirmed by the second author (Ref 7) in 1956. Table 1 and figure 1 show that in the mass of monoliths the chlorine content of the buried waters increases linearly or almost linearly in upward direction. This indicates very even uninterrupted salification of the Black Sea which is still continued. This conclusion is based upon objective material and agrees with reference 6 according to which the complex of New-Euxinian brackish organisms is displaced by marine mediterranean varieties. Thanks to the linear character of the change of the chlorine content the problem of diffusion can be solved. The distribution of the chlorine content along the length of the monolith is determined by the actual change of chlorine content in water. A gravitational mixing of the solutions is possible only in the uppermost sediment strata with a high water content. The salification of the Black Sea may be related to increasing dryness of the climate, rising surface of the ocean in connection with the end of the last glacial phase, sporadic regression of the glaciers during the post-glacial period, and finally to the probable depression of the continent around the straits of the Black Sea by erosion near the ground or the depression of the entire

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region of the Black Sea. The author concludes that the ever-increasing water exchange with the Mediterranean and not the change of climate is the decisive factor of salification. This theory does not exclude cyclic climatic fluctuations; but the water exchange dominates over the climatic factor. Salification takes place at a rate of  $\sim 0.20 - 0.25\%$  of chlorine content per 1000 years, to give a rough approximation. There are 1 figure, 1 table, and 12 references, 9 of which are Soviet.

ASSOCIATION: Institut okeanologii Akademii nauk SSSR (Institute of Oceanography of the Academy of Sciences, USSR)

PRESENTED: March 13, 1959, by S. I. Mironov, Academician

SUBMITTED: March 10, 1959

Card 3/3

5 (0)

AUTHORS: Krasintseva, V. V., Shishkina, O. V. SOV/20-128-4-50/65

TITLE: The Problem of Boron Distribution in Marine Deposits

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 4, pp 815 - 817  
(USSR)

ABSTRACT: The ocean is one of the two main sources of boron and boron deposits in the zone of hypergenesis. The seawater contains considerable boron quantities ( $4.6 \cdot 10^{-4}\%$ ). The concentration of boron in the open part of most of the seas and of the ocean is proportional to that of chlorine and the ratio boron: chlorine is constant =  $2.39 \cdot 10^{-4}\%$  (Ref 3). The boron content in clayey marine deposits is 10-100 times higher than in the water. According to Gol'dshmidt (Ref 4) the boron content in the grey mud is equal to  $3 \cdot 10^{-3}\%$ , in the brown one it amounts to  $1.5 \cdot 10^{-2}\%$ . Mrs. S. G. Tseytlin found  $4.36 \cdot 10^{-7}\%$  boron in the mud water of the Caspian Sea. The problem of the distribution of boron between the liquid and solid phase of the deposit is not yet solved. The authors investigated this problem in the Black Sea and in the Pacific. The recent deposits of the Black Sea

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(Table 1) have mostly a high boron content. It decreases somewhat with increasing depth. The high boron content is here possibly connected with a relatively high content of organic substance. This substance is especially high in samples rich in boron. A rapid decrease of the boron content in mud waters of the chloride-sodium-calcium type is possibly connected with a molecular sorption of calcium borates difficult to solve which increase by approximately the 3-fold with the increase of the concentration of the calcium ions (Ref 9). The main mass of chlorine carries with it an only small part of the boron with the solidification of the muds and the precipitation of the mud water from the latter. The major part of the boron remains in the sedimentary rocks and may partly pass over into the solution in the leaching of the rocks. Accordingly, the ratio B/Cl in the seam water is bound to be lower than that in seawater of chloride-sodium-calcium type and somewhat higher in the water of chloride-alkaline type. In underground waters developing in the leaching of sedimentary rocks of marine origin B/Cl may rise by the 10-100-fold. Table 1 shows pertinent data referred to the Pacific. Red clays are relatively richer in boron than calcareous clays and grey clays. This is probably caused by the manganese

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concretions which contain boron in considerable quantity. Up to 20% of the total boron pass over into the solution in the leaching of these clays. The highest content of total boron was found in the diatom muds. The content of organic substance is here the highest, too. According to A. P. Vinogradov (Ref 10) the marine plant organisms are richer in boron than the animal organisms. On the other hand, the mud water of the diatom deposits is poor in boron. The Globigerina mud contains the smallest total boron quantity of all deposits of the Pacific. Professor S. V. Bruyevich assisted with valuable advice. There are 1 table and 11 references, 7 of which are Soviet.

ASSOCIATION: Institut okeanologii Akademii nauk SSSR (Institute of Oceanography of the Academy of Sciences, USSR)

PRESENTED: April 24, 1959, by A. A. Grigor'yev, Academician

SUBMITTED: April 24, 1959

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SHISHKINA, O. . .

Meeting of oceanographers. IUn.tekh. 4 no.7:52-55 J1 '60.  
(MIRA 13:9)  
(Oceanography--Congresses)

S/169/62/000/010/053/071  
D228/D307

AUTHOR: Shishkina, O.V.

TITLE: Water types formed in marine sediments during  
diagenesis

PUBLICATIONAL: Referativnyy zhurnal, Geofizika, no. 10, 1962, 7,  
abstract 10V59 (In collection: Sovrem. osadki morey  
i okeanov, M., AN SSSR, 1961, 549-559)

TEXT: A classification is suggested for the muddy waters  
(ground solutions) of marine sediments. The first, marine type  
covers waters in which the correlations between the chief chemical  
components are close to those in ocean water. In this type 2 forms  
of water are distinguishable according to the nature of the change  
of their alkali reserve; in comparison with benthonic water one has  
an elevated, and the other has a reduced, concentration of the  
latter. A characteristic feature of sediments with the marine type  
of muddy water is their low organic-matter content. The second,  
chloride-alkali type and the third, chloride-sodiocalcic type of

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Water types formed ...

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D228/D307

muddy sediment waters are profoundly metamorphosed during the dia-  
genesis of marine sediments by even sea-water. The author dwells  
in detail on the processes of metamorphization of sea-water into  
muddy water of the second and third types and shows the fallibility  
of opinions, relating their origin to other processes.  
[Abstracter's note: Complete translation]

Card 2/2

SHISHKINA, O.V.

Some data on the salt composition of silt waters in the Sea of Azov.  
Okeanologiya 1 no.4:646-650 '61. (MIRA 14:11)

1. Institut okeanologii AN SSSR.  
(Azov, Sea of--Water--Composition)

SHISHKINA, O.V.

Oxidation-reduction potential of the upper ten-meter stratum  
of Quaternary deposits of the Black Sea. Dokl. AN SSSR 139  
no.5:1218-1220 Ag /'61. (MIRA 14:8)

1. Predstavleno akademikom N.M. Strakhovym.  
(Black Sea--Sediments (Geology))  
(Oxidation-reduction reaction)

SHISHKINA, O.V.; BYKOVA, V.S.

Chemical composition of interstitial waters in the Atlantic Ocean.  
Trudy MGI 25:187-194 '62. (MIRA 15:2)  
(Atlantic Ocean--Sea water--Composition)

SHISHKINA, O.V.

Some results of studying interstitial waters of the Black Sea.  
Trudy Inst. okean. 54:47-57 '62. (MIRA 16:6)  
(Black Sea--Sea water--Analysis)

SHISHKINA, O.V.; ZHELEZNOVA, A.A.

Chlorinity of the interstitial water in the northern part of  
the Indian Ocean. Trudy Inst. okean. 64:144-153 '64.

Oxidation-reduction potential and the pH of sediments in the  
northern part of the Indian Ocean. Ibid.:236-249

(MRA 17:7)

PAVLOVA, G.A.; SHISHKINA, O.V.

Method of determining iodine in interstitial waters. Trudy Inst. okean.  
67:165-176 '64. (MIRA 17:12)

SHLICHKINA, O.V.

Chemical composition of oceanic silty waters. Geokhimiia no.6:564-  
572 Je '64. (MIRA 18:7)

1. Institut okeanologii AN SSSR, Moskva.

SHISHKINA, O.V.; PAVLOVA, G.A.

Distribution of iodine in marine and oceanic silts and silt waters.  
Geokhimiia no.6:739-746 Je '65. (MIRA 18:7)

1. Institut of Oceanology, Academy of Sciences, U.S.S.R., Moscow.

KORITSKIY, K.I.; Prinimali uchastiye: SHISHKINA, R.M., ispolnyayushchaya  
obyazannosti starshego nauchnogo sotrudnika; YAGUBOVA, Yu.G.;  
MARININA, Yu.S., mladshiy nauchnyy sotrudnik

Core yarn, its structure and properties. Nauch.-issl.trudy  
TSNIIKHBI '60 [publ. '62]:25-55 (MIRA 18:2)

"APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R001549610009-6

Mr. [redacted] M.

Scored with Jayne Johnson, [redacted], [redacted] (MURKIN 21  
1962 g. 175-189 '54.) (SAC 1218)

APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R001549610009-6"

ZAGRANICHNYY, V.I.; POLYAKOVA, Z.A.; Prinimali uchastiye: MAZUROVA, G.Ye.;  
SHISHKINA, S.S.

Solubility in water of melamine and some of its derivatives.  
Khim.prom. no.9:692-694 S '63. (MIRA 16:12)

SHISHKINA, T. A.

p. 2

SCA 177-4-2-15/18

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SOV/77-4-2-1578  
 Successes of Soviet Electrophotography; A Scientific and Technical Conference on Questions of Electrophotography

K.N. Vinogradov described some of the features of the cascade and liquid methods of electrophotographic development. Yu.Ye. Karpekhov devoted his report to the criterion of light sensitivity of the electrophotographic process. After the report on a discussion took place on methods of determining the light sensitivity of electrophotographic layers. A.N. Chernyavsky spoke on the prospects of developing polygraphic processes using electric and magnetic forces. O.V. Jromov (speaking also for I.I. Zhilovich, A.A. Dubchik, V.I. Gordiyeva, N.I. Pavlova and Yu.I. Kavalayev) reported on the development of electrophotographic reproducing equipment. N.I. Gal'yudka and M.I. Rukinskaya (speaking also for I.I. Zhilovich, A.S. Borisovich, N.I. Gal'yudka and M.I. Rukinskaya) reported on the use of electrophotographic methods in recording oscillographs and other recording instruments.

V.P. Yurchenko (speaking also for L.N. Balin) spoke on the possibility of electrophotographically recording images from electron beam tubes. S. Kholod (speaking also for N.N. Markovich, T. N. Polovinkina, B.I. Malinovskaya, I. V. Nevezina, I. V. Shilovskaya and B.A. Montelius) gave a detailed description of laboratory machine methods of producing photoresistor laboratory papers (zinc oxide was used). A.A. Dubchik (speaking also for I.I. Zhilovich, O.V. Jromov, V.V. Gordiyev, R.V. Pashkov and T.N. GOF) described a laboratory and industrial machine for producing photoresistor papers. T.I. Shabakina (speaking also for I.A. Chaban) reported on a method of examining electrophotographic materials using an a/c bridge. S.I. Kholyanovovich (speaking also for A.I. Gikas and I.S. Vilekken) spoke on developing methods for electrophotography and ferromagnetography, including developing a "diving" a "swimming" image. N. N. Kholodovskiy described a method of electrophotographic development using a layer with varying potential, increasing that in oscillating electrode should not be placed above a layer with varying potential as this causes self-discharge. E.V. Kholovskiy (speaking also for R.J. Goryev, N. N. Osipov and Ye. S. Kleyfets) spoke on the practice of producing "diving" between papers in an electrostatic field and showed samples produced by the Gribishchikaya paper factory. Ye. S. Kleyfets then gave a historical review of the development of electrophotographic methods in which he paid tribute to the work of the Scientific Research Institute of Electrophotography in Vilnius and the Institute of Polytechnic (serial) (polygraphic machine-building) Institute. (Keser) samples were then held

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on methods of measuring the properties of charged electro-photographic layers, the Vizirul'nikov pick-up most-accurate. S.G. Grigor'yan's report to be not always of the oscillating electrode can be eliminated if the up is connected to it. The probe is fixed and the tick-base on Fe.I. Neirovsky's report it was stated that the research of Academician A.N. Torezin and V. V. Putnayko should be considered as the basis of all the first to show the possibility of obtaining information the universal photoeffect in photoelectric devices. Then gave a report on the deposition of polyacrylic acid on the electrodes of charges. V. V. Vasil'ev reported some of the results of the electrographic methods in Radiography. L.I. Kryukov (speaking also for L.I. Zhilavich, V.I. Rabin, Yu.F. Vishchikov and Yu. V. Kuznetsov) reported on relaxation processes in semiconductor layers, using a vibration (radio-) physical method. Yu. P. Kuznetsov gave a report on research on electrical properties of the polycrystalline layers of selenium-cadmium. M.F. Mukul'shavicius spoke on some of the photoelectric properties of  $\text{Sb}_2\text{S}_3$  and  $\text{Sb}_2\text{Se}_3$ ; the absorption maximum of the latter is about 700  $\text{m}\mu$ . S.M. Dzeyan reported on methods of obtaining selenium-light-sensitive layers including sublimation and thermal treatment; it was also found that the sensitivity of the layers increased after storage for 1.5 to 2 months at room temperature. P. V. Polyanskii (speaking also for S.G. Greinshin) spoke on Research into the electrical properties of electrophotographic layers of amorphous selenium and powdered zinc oxide. M.V. Shikorov (speaking also for A.D. Tumanyan) discussed the production of selenium layers and discussed properties. Finally the following reports on ferro-magnetography were delivered: 1) Ya. Kharlamchayev, V. Zhdanov, "Electrodes of Ferro-magnetic Alloy and Their Magnetic Characteristics"; 2) V. I. Kharlamchayev, "Production of Magnetic Oxides"; 3) V. I. Kharlamchayev, "Ferromagnetic Properties of Ferro-magnetic Alloy"; 4) V. I. Kharlamchayev by the "Ferromagnetic Image" and "Ferromagnetic Recording in Non-Frequency Ferromagnetic Materials". There was also an exhibition showing the work of the Electro-Graphic Institute.

The most important conclusion of the conference was that a solid approach had been made to the possibility of wide technical use in this field.

It was considered that all research work

as the USSR in 10 years, while admitting that much ground

had to be covered than to be

achieved already.

The conference observed that the Americans took good care that no important information appeared in the literature available.

Cert 10/10

VORONKOVA, N.M.; MELESHKO, K.Ye.; SEMENCHENKO, I.V.; SNYTKIN, A.V.;  
SHISHKINA, T.A.

Use of the spectrovisor in studying the spectral brightness of  
landscape elements. Geod. i kart. no. 12:20-25 D '60.

(Spectrophotometry) (Aerial photogrammetry) (MIRA 14:1)